

WHAT IS CLAIMED IS:

1. A drive circuit for a MEMS device, comprising:

an electrode driver; and

a switching network, coupled to an output of said electrode driver that:

in a first configuration, couples said output to a first electrode of an axis of said MEMS device and grounds an opposing second electrode of said axis of said MEMS device, and

in a second configuration, couples said output to said second electrode and grounds said first electrode.

2. The drive circuit as recited in Claim 1 wherein said electrode driver comprises:

a digital-to-analog converter; and

an amplifier that provides said output.

3. The drive circuit as recited in Claim 1 wherein said first and second configurations are mutually exclusive.

4. The drive circuit as recited in Claim 1 wherein said switching network comprises:

a first switch interposing said output and said first

4 electrode;
5 a second switch interposing said output and said second
6 electrode;
7 a third switch interposing said first electrode and an
8 electrical ground; and
9 a fourth switch interposing said second electrode and said
10 electrical ground.

2 5. The drive circuit as recited in Claim 4 wherein said
3 first and fourth switches operate in tandem, said second and third
4 switches operate in tandem and said first and second switches are
never simultaneously in an ON state.

2 6. The drive circuit as recited in Claim 1 further
comprising:

3 a second electrode driver; and

4 a second switching network, coupled to an output of said
5 second electrode driver that:

6 in a first configuration, couples said output to a third
7 electrode of a second axis of said MEMS device and grounds an
8 opposing fourth electrode of said second axis of said MEMS
9 device, and

10 in a second configuration, couples said output to said
11 fourth electrode and grounds said third electrode.

7. The drive circuit as recited in Claim 1 wherein said
2 electrode driver and said switching network are embodied in an
3 integrated circuit.

8. A method of driving a MEMS device, comprising:

2 assuming a first configuration in which an output of an
3 electrode driver is coupled to a first electrode of an axis of said
4 MEMS device and an opposing second electrode of said axis of said
5 MEMS device is grounded; and

6 assuming a second configuration in which said output is
7 coupled to said second electrode and said first electrode is
8 grounded.

9. The method as recited in Claim 8 wherein said electrode
2 driver comprises:

3 a digital-to-analog converter; and
4 an amplifier that provides said output.

10. The method as recited in Claim 8 wherein said first and
2 second configurations are mutually exclusive.

11. The method as recited in Claim 8 wherein said switching
2 network comprises:

3 a first switch interposing said output and said first
4 electrode;

5 a second switch interposing said output and said second
6 electrode;

7 a third switch interposing said first electrode and an

8 electrical ground; and
9 a fourth switch interposing said second electrode and said
10 electrical ground.

12. The method as recited in Claim 11 wherein said first and
2 fourth switches operate in tandem, said second and third switches
3 operate in tandem and said first and second switches are never
4 simultaneously in an ON state.

13. The method as recited in Claim 8 further comprising:
2 assuming a first configuration in which an output of a second
3 electrode driver is coupled to a third electrode of a second axis
4 of said MEMS device and an opposing fourth electrode of said second
5 of said MEMS device is grounded; and
6 assuming a second configuration in which said output is
7 coupled to said fourth electrode and said third electrode is
8 grounded.

14. The method as recited in Claim 8 wherein said steps of
2 assuming are carried out in an integrated circuit.

15. An integrated circuit, comprising:

a plurality of MEMS devices each having first and second axes
of tilt; and

a corresponding plurality of drive circuits, each comprising:

first and second electrode drivers,

a first switching network, coupled to an output of said
first electrode driver that alternatively drives opposing
first and second electrodes of a first axis of one of said
plurality of MEMS devices, and

a second switching network, coupled to an output of said
second electrode driver that alternatively drives opposing
third and fourth electrodes of a second axis of said one of
said plurality of MEMS devices.

16. The integrated circuit as recited in Claim 15 wherein
said first and second electrode drivers each comprise:

a digital-to-analog converter; and

an amplifier that provides said output.

17. A method of manufacturing an integrated circuit,
2 comprising:

3 fabricating a plurality of MEMS devices each having first and
4 second axes of tilt; and

5 forming a corresponding plurality of drive circuits, each
6 comprising:

7 first and second electrode drivers,

8 a first switching network, coupled to an output of said
9 first electrode driver that alternatively drives opposing
10 first and second electrodes of a first axis of one of said
11 plurality of MEMS devices, and

12 a second switching network, coupled to an output of said
13 second electrode driver that alternatively drives opposing
14 third and fourth electrodes of a second axis of said one of
15 said plurality of MEMS devices.

18. The method as recited in Claim 17 wherein said first and
2 second electrode drivers each comprise:

3 a digital-to-analog converter; and

4 an amplifier that provides said output.